

Barriers to Information Technology Change Projects in Hotels

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Abstract

The purpose of this study is to investigate the barriers and the sources of resistance to information technology (IT) change projects in hotel firms and evaluate strategies adopted in seeking to overcome these barriers. Based on an in-depth literature review, the authors developed an interview protocol. The authors collected empirical data from the Information Technology Managers and the Hotel General managers in hotels in Orlando, FL. Based on the authors' knowledge; this is one of the first research projects in the field that will provide empirical evidence on barriers to IT change projects and appropriate strategies to overcome those barriers in hotel companies.

Key words: Information technology, change, barriers, hotels, Orlando.

1. Introduction

Ulrich (1998) states, "the pace of change today, because of globalization, technological innovation, and information access, is both dizzying and dazzling". In addition, developments and changes in information technology (IT) are common in hotel companies (Buhalis & Law, 2008). Developments in ITs have changed both business practices and strategies (Porter, 2001). It is known that IT implementation, changes and updates can be costly (Yeh, Leong, Blecher, & Lai, 2005) and may have major implications on hotel operations (Sigala, 2005), customer service (Meuter, Ostrom, Roundtree, & Bitner, 2000), and human resources management practices (Burke & Ng, 2006). The hotel industry highly relies on information technology to improve employees' productivity and efficiency, accordingly to improve customer satisfaction (Lam, Cho, & Qu, 2007). Although hotel managers may recognize the importance of integrating technology into their properties, such IT changes may face major barriers and resistance from both internal and external sources. Hotel general managers and IT managers need to be informed and trained about managing change, identifying potential barriers and overcoming these potential barriers to IT changes in hotels. However, there is limited research into this area in the hospitality field. The aim of this research is to investigate potential barriers and resistance to IT change projects in hotels and suggest appropriate strategies to overcome them.

Firms are struggling with the pressures of environmental performance (Kolluru, 1993). Rapid developments in information technologies offered such opportunities for the firms that were not possible years ago. In the face of such developments and pressure, companies, their employees, and especially their managers, are faced with the enormous practical and conceptual challenge of transforming today's organizations into automated enterprises. This article addresses that challenge and discusses the various barriers to change that have been identified in the hotels we have investigated. These barriers are analyzed with a view to defining more precisely and categorizing the nature of the challenges involved, and discussing the practical actions necessary to overcome those barriers.

IT project implementation literature still encapsulates different opinions among academia and industry. The reason behind this, every company is unique; they adopt different missions and visions; some hotels believe that IT is a significant strategic weapon whereas others do not implement IT projects. Consequently, there are different motives and barriers to change in different settings and at different times. Change may be more likely if the strategies are specifically chosen to address the identified barriers (Cheater, Baker, Gillies, Hearnshaw,

Flottorp, and Robertson, 2005). Cheater et al. (2005) claimed that barriers might be related to three issues: individual, social, and organization. In order to fruitfully change behavior, barriers should be identified and strategies should be developed to overcome those barriers. To state the matter differently, it is thought that strategies tailored to overcome barriers should be more effective to change behavior than non-tailored strategies or no strategy at all.

2. Theoretical Background

In order to understand potential barriers to implementation of IT projects, it is necessary to look at two stream of literature, which are (1) the generic change and strategy implementation literature and (2) IT implementation literature. The literature on change management highlights potential barriers to change such as high costs, lack of skills and resources, time limitation, priority of other businesses, technical difficulties, internal politics, commitment to the current practices, and strong organizational culture (Carnall, 1995; Okumus and Hemmington, 1998; Overhot et al., 1994; Strabel 1996). In the same vein, the literature on IT implementation suggests similar barriers to change. For instance, Kuruppuarachchi et al. (2002) note that processes and people in an organization must endure major change, learning, adaptation and growth in response to the introduction to IT. Cooper (1999) stated that failure of overcoming IT implementation barriers will result in failure of organizations. Heung (2003), examined the barriers to implementing E-commerce in the travel industry and found out that cost of implementation within the company was the most important factor followed by short of well-trained staff, security concerns, hard to manage travel data, lack of training respectively. Moreover, Heung (2003) classified 5 different factors that cause obstacle IT implementation which were technical issues, lack of knowledge, partner's participation, and security.

Stewart et al. (2004) claimed that IT implementation barriers occur in three different levels: industry, organization level and project level. Each of the level requires different strategies to overcome the IT implementation barriers. After reviewing the literature, we propose a model (see Figure 1) that pinpoints the barriers in the lodging industry.

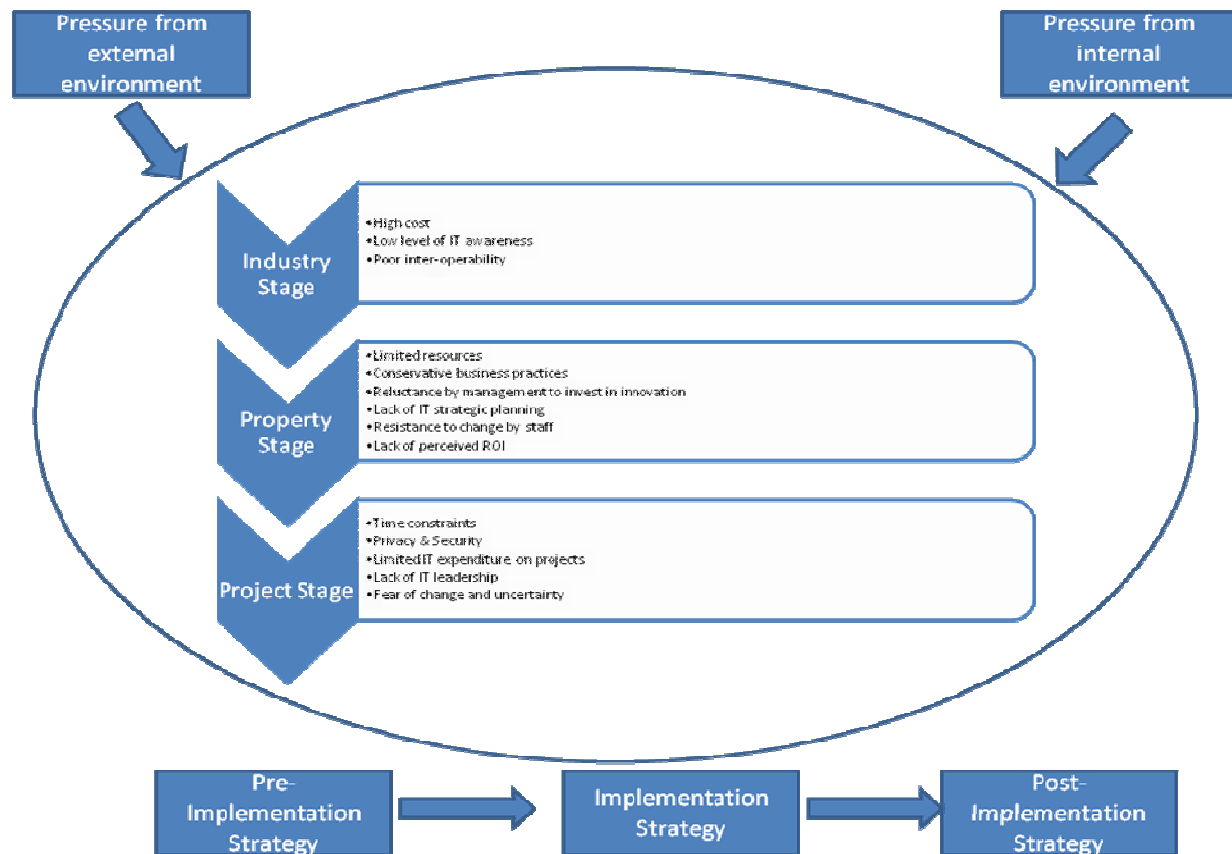


Figure 1. IT Implementation Barriers and Stages

Source: Compiled by the authors based on reviewing relevant literature

In order to overcome the barriers, there are some potential strategies that hotels can follow. Okumus and Hemmington (1998) investigated the barriers and resistance to change in hotel firms and found out that communication, training, participation, involvement, planning, and power were the important aspects of the strategies that are used by hospitality managers to overcome barriers. Communication was the most important factor in the change process, followed by training. They also highlighted that overcoming barriers to change in the hotels that were a part of large chains appeared easier than independent hotels.

Muilenburg & Berge (2001) investigated the barriers to distance education and determined 10 constructs; administrative structure, organizational change, technical expertise, social interaction and quality, faculty compensation and time, threat of technology, legal issues, evaluation/effectiveness, access, and support services. Moreover, Johnson (2001) investigated the technology implementation barriers in healthcare industry and discovered 4 main categories; Situational factors (economic realities and external environmental factors affecting access to or use of technology); cognitive factors (insufficient skills or ability to use a technology); legal factors (regulated or unregulated practices that affect use of a technology; and attitudinal factors (behaviors or opinions contrary to those needed to adopt a technology).

As technological advances continue to emerge, hotels will be required to make dramatic

changes (Siguaw et al., 2000). However, the changes have barriers to overcome. The literature review from different industries revealed a number of potential barriers to IT implementation as indicated in Table 1.

Authors	Setting	Barriers
Heung (2003)	E-Commerce in Travel Industry	Cost of implementation Short of well trained staff Technical issues Lack of knowledge Partner's participation Security
Stewart et al. (2004)	Construction Industry	Tight project timeframes inhibit training and experimenting with IT Limited IT expenditure on projects Lack of IT leadership on projects Low technology literacy of some project Participants Security & privacy issues Fear of change and uncertainty by some project participants Cost-driven and/or ill-informed client organizations Poor inter-operability between different applications/organizations High cost associated with IT applications Low profit margins Relatively low level of IT awareness (exposure to IT) Fragmented nature of the industry Lack of leadership by major client organizations Cyclical variations in workload activity levels Limited resources available to small and medium enterprises Lack of perceived return on investment on IT expenditure Lack of organizational strategic planning Reluctance by management to invest in innovation at a company level Conservative business practices Resistance to change by staff
Johnson (2001)	Health Care Industry	Time and financial pressure Unproven return on investment

		Insufficient or no access to IT Affordability IT software not developed for the purpose Insufficient computer skill Confidentiality concerns Insufficient research Insufficient knowledge Apprehension about change Philosophical opposition to IT
Muilenburg & Berge (2001)	Education (Distance Learning)	Administrative structure Organizational change Technical expertise Social interaction and quality Faculty compensation and time Threat of technology Legal issues Evaluation/effectiveness Access Support services
Nanji, Cina, Patel, Churchill, Gandhi, & Poon (2009)	Health Care Industry	Training requirements and process flow Technology itself The role of vendors Communication issues Changing roles Negative perceptions about technology
Cooper (1998)	Product Innovation	Ignorance Lack of skills Faulty of misapplied process Too confident Lack of discipline Big hurry and cut corners Too many projects and not enough sources
Nambisan & Wang (2000)	Web Technology Service Providers	Complexity Compatibility Cost Technology related knowledge barriers Project management related knowledge barriers Application related knowledge barriers
Walley & Davies (2002)	Health Services	Irreconcilable differences in stakeholder requirements The low status of the project team Poor understanding of process management issues

		Organization politics.
Ebrahim & Irani (2005)	E-government	IT infrastructure Security and privacy IT skills Organizational Operational cost

IT project implementation barriers are categorized in different ways in the literature such as internal, external (Carnall, 1995) or project level, organizational level, industry level (Steward et al., 2004), or situational, cognitive, liability, and knowledge (Johnson, 2001). It is crucial to note that each organization will face a range of potential conflict depending on the particular situation they face at the time (Okumus and Hemmington, 1998). The identification of potential barriers to IT implementation is vital, however it is more important to decide on and evaluate how hotels can overcome and manage resistance and to identify possible sources of resistance to change. Nambisan & Wang (2000) argued that the differential opportunity to adopt technologies derived from knowledge barriers and varied degrees of involvement of supply-side institutions can lower these barriers. They categorized knowledge barriers under three groups; (a) technology-related knowledge barrier that originates from lack of knowledge regarding the appropriate hardware and software infrastructure, technology features, security, standards, vis-à-vis the unique business context of the organization; (b) project-related knowledge barrier that refers to the lack of knowledge regarding resource requirements (financial, human) for technology development, development methodology–process–duration, project leadership, functional participation, and so on; (c) an application-related knowledge barrier: relates to the lack of knowledge regarding the business objectives that will be served by the technology, the value of the various technology features for the adopting unit, the key business assumptions required to be made for deploying the technology, the potential for integrating the application with existing IT applications, and the impact of the application on the current organizational structure and systems. The higher the knowledge barrier is for an adopting unit, the more likely that adoption will be delayed.

Walley & Davies (2002) revealed that external factors are not the only reason for the slow introduction and limited impact of new technology. Internal barriers that significantly limit the implementation process include an unsupportive organization structure, irreconcilable differences in stakeholder requirements, the low status of the project team, a poor understanding of process management issues and organization politics.

2.1. Roles in Managing Change

When strategic change is the topic, usually, there is an excessive emphasis on top management (Johnson et al, 2009). It is more positive to think of change agency more broadly. A change agent is the individual or group that helps effect strategic change in an organization. Change agent could be an employee from middle management, a consultant, or an outsider. The management of change is, however, often directly linked to the role of a strategic leader.

2.2. Change Management

Usually, a hotel's IT projects are a part of wider business process reform that involves business systems, organizational structure, and people. Consequently, the impacts of IT projects

are significant. People and processes in an organization must endure major change, learning, and adaptation and growth in response to the introduction to IT (Kuruppaurachchi et al., 2002). Change management is a vital challenge to the management that directs large IT projects. It is the IT managers' duty to offer solutions that would facilitate changes as smoothly as possible. Project management's functions differ from the general management. As Duncan (1993) posits, planning, executing, and controlling are the three chief functions of general management, however, the project management includes two distinguished key functions; initiating and closing. Antill (1974) investigated the main objectives of project management and developed a set of objectives that includes; (a) development and completion of projects within budget and time, (b) establishing high quality workmanship and efficient performance, (c) create and operate an effective team, (d) motivate people to give their best.

2.3. Overcoming the Barriers

In order to remove the barriers and coping with the resistance to the change, literature suggests several steps for the firms to follow. For instance, after highlighting the IT implementation barriers, Stewart et al. (2004) emerged possible solutions. From the industry level barriers perspective, the emerging strategies included developing standardized processes/outputs with commonly available IT applications to facilitate interoperability between members of the value chain. Second emerging strategy from their findings was to publicize the advantages and quantify the benefits in adopting IT-based communication systems. Coping with the organizational level barriers strategies included adopting IT related applications with short learning curves. This strategy applies very well to hotel industry due to high turnover rates. Developing an IT strategic plan with full support by senior management was another emerging strategy. Project level overcoming barriers strategies included ensuring adequate technical support, encouraging more active involvement by IT staff at the project level, and conducting regular evaluation of IT-induced benefits at the project level. Moreover, Poon et al. (2004) developed four strategies in order to overcome the barriers to adopting and implementing ITs in healthcare: Strong leadership; identifying champions; addressing workflow concerns; and leveraging.

Nanji et al. (2009) investigated the technology implementation barriers in hospitals and proposed strategies, and also identified strategies to overcome those barriers; adequate training, continuous improvement, and adaptation of workflow to address one's own needs mitigated process barriers. Moreover, ongoing vendor involvement, acknowledgment of technology limitations, and attempts to address them were crucial to overcome technology implementation barriers. Staff resistance was addressed through clear communication, identifying champions, emphasizing new information provided by the system, and facilitating collaboration.

Since investment in IT-related projects tends to be substantial with a high failure rates, a substantial research established exists on IT evaluation techniques (Remenyi and Sherwood-Smith, 1999). While IT projects perceptibly evaluated in the sense their technical feasibility and effect on existing systems in addition to their performance, usability and reliability, many practitioners stress the importance of estimating the contribution of the system to the organization's strategic position (McFarlan, 1984).

3. Methodology

In order to investigate potential barriers to deployment of IT projects in hotels and identify appropriate strategies to overcome such barriers, the authors decided to employ a qualitative research strategy and collect data through interviews. It was believed that this approach would be effective in revealing the participants' stories and allow them to reveal thoughtful insights about the meanings of their experiences and knowledge. Interviews with key decision makers are one of the best ways to identify the key symptoms (Zikmund, Babin, Carr, & Griffin, 2009). Through probing during interviews the researcher can collect deeper and more elaborate expressions. The probing technique is very advantageous in investigating key issues that are prime candidates for the study (Zikmund, Babin, Carr, & Griffin, 2009). For example, Myers and Newman (2007) investigated the qualitative interview techniques in Information Systems research. One of the interview type that they proposed for IS research was semi-structured interview" which will be used in this study.

After reviewing change management and IT implementation literatures, the authors have developed a semi-structured interview protocol which has four main sections. The first section has questions about the hotel company and IT applications. The second section has questions about those recent IT projects in the hotel, reasons for developing them and how they were implemented. The third section has specific questions about barriers and resistance to specific IT projects and how the hotel company and its managers overcame these barriers and challenges. The final section has questions about whether the managers have any further comments and suggestions regarding the research project. A purposive sampling method was used to collect data for this project. Hotel managers and IT managers who have recently conducted any IT projects was approached and interviewed.

The authors are currently approaching hotels in Orlando, FL to collect empirical data. We hope to look at minimum 20 IT project deployments in hotels. As this is one of the first research projects on IT project implementation in hotels, the research findings will have theoretical and practical implications.

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